V481

WinXP Embedded User's Manual

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V481
WinXP Embedded User's Manual

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1

Introduction

The V481-XPE is an industrial, ready-to-run embedded computer that supports VGA and audio. The computer comes with dual LAN ports, 8 serial ports, 2 CompactFlash slots, and 2 USB ports, and is based on the Intel x86 processor. With its VGA interface, the V481 is especially well suited for industrial applications, such as SCADA, factory automation, and other applications that require an onsite HMI or visual monitoring capability.

The V481-XPE's 8 built-in, software-selectable RS-232/422/485 serial ports make it an ideal solution for connecting to different devices. The dual LAN ports offer a reliable solution for network redundancy by providing continuous operation for data communication and management. In addition, the second CompactFlash socket makes it easier to add storage space, and the USB ports can connect to a wide range of devices, making the V481 a reliable embedded computer for industrial applications that require VGA and HMI features.

The V481-XPE comes pre-installed with the Windows XP Embedded operation system, providing programmers with a friendly environment for developing application software. V481-XPE programmers have an added advantage in that Moxa provides good software support to reduce the cost and time required for software development.

In this chapter, we cover the following topics:

- **Overview**
- **Package Checklist**
- **Product Features**
- **Product Hardware Specifications**
- **V481-XPE Software Features**
  - **Application Development Environment**
  - **Networking and Communication Capabilities**
  - **Supporting Services and Daemons**
- **How to Determine Firmware Build Versions**
- **Enhanced Write Filter**
- **Inserting a USB Mass Storage Device into a V481** Computer
- **Inserting a CompactFlash into the Computer**
- **Eight RS-232/422/485 Serial Ports**

Overview

The V481-XPE Series of x86 ready-to-run embedded computers is designed around the Intel Celeron M 1 GHz processor. In addition to the usual computer peripherals, the V481 integrates one 10/100 LAN port, one Gigabit LAN port, and 8 RS-232/422/485 serial ports, making the V481 into an ideal industrial embedded computer for handling industrial communication applications that need to connect to a monitor or HMI onsite.

The on-board CompactFlash and DDR SDRAM provide ample storage capacity, and the second CompactFlash socket allows users to install additional memory.

The Windows-based operating system comes pre-installed and ready-to-run, providing a Windows-like environment for easy software development. Software written for desktop PCs is easily ported to the V481 using a common complier, which means that programmers do not need to spend a lot of time modifying existing software code. In addition, the operating system, device drivers, and user-developed software can all be stored in the pre-installed CompactFlash memory Card.

Package Checklist

The V481-XPE-XPE Series includes the following models:

V481-XPE
x86 Ready-to-Run Embedded Computer with VGA, Dual LANs, 8 serial ports, CompactFlash, USB, Audio, WinXP Embedded

V481-T-XPE
x86 Ready-to-Run Embedded Computer with VGA, Dual LANs, 8 serial ports, CompactFlash, USB, Audio, WinXP Embedded, Wide Temperature

Each model is shipped with the following items:

- 1 V481-XPE Embedded Computer
- Quick Installation Guide
- Document and Software CD
- Din-rail Mounting Kit
- 100 cm RJ45-to-RJ45 cross-over Ethernet cable
- 20 cm Y-type cable for connecting a keyboard and mouse (CBL-MiniDIN6P/6Px2-20)
- Terminal block to power jack converter (includes terminal block)
- Product Warranty Statement

Optional Accessories

- Switching Power Adaptor:
  60W, 24 VDC output, 100 to 240 VAC input (Order No.: 1117224250210), power cord must be ordered separately.
- Power Cords:
  Power cord with Australia Plug (Order No.: 9199000000500)
  Power Cord with UK Plug (Order No.: 9199000000600)
  Power Cord with Euro Plug (Order No.: 9199000000700)
  Power Cord with US Straight Plug (Order No.: 9199000000800)

NOTE*: Please notify your sales representative if any of the above items are missing or damaged.*

Product Features

The V481-XPE embedded computers have the following features:

- Intel Celeron M 1GHz CPU, 400 MHz FSB
- IDE hard disk support (for products produced after June 1, 2008)
- Built-in DDR SDRAM, and industrial CompactFlash
- 8 software-selectable RS-232/422/485 serial ports
- Serial port speed from 50 bps to 921.6 Kbps; supports ANY BAUDRATE
- 10/100 and 10/100/1000 Mbps LANs for network redundancy
- Second CompactFlash socket for storage expansion
- Two USB 2.0 hosts support system bootup
- LED indicators for system power and storage
- Designed to withstand 5G continuous vibration and 50G shocks
- Ready-to-Run WinXP Embedded platform
- DIN-rail and wall-mount installation
- Fanless design for increased ruggedness
- Wide temperature model available

Product Hardware Specifications

System	
CPU:	Intel ULV Celeron 1GHz processor without L2 Cache
System Chipset:	Intel 852GM GMCH + ICH4 chipset
FSB:	400 MHz
BIOS:	4 Mbit Flash BIOS; supports Plug & Play
System Memory:	200-pin SO-DIMM socket x 1 with built-in 512 MB DDR; supports DDR200/266 up to 1 GB
Supported OS:	Windows XP Embedded
Display	
Graphics Controller:	Integrated graphics with built-in Intel 852GM GMCH, built-in Intel extreme Graphics 2 technology
Display Memory:	Dynamic video memory, sharing up to 32 MB of system memory
Display Interface:	CRT Interface for VGA output
Storage	
Built-in:	Onboard Industrial CompactFlash for storing OS, > 256 MB for WinCE 5.0 model, > 1 GB for WinXPe model
Expansion:	> Second CompactFlash socket for storage expansion > Products produced after June 1, 2008, also support IDE hard disks
Network Communication	
LAN1:	Auto-sensing 10/100 Mbps Ethernet, using integrated MAC and Intel 82562GZ Transceiver, RJ45 connector
LAN2:	Auto-sensing 10/100/1000 Mbps Gigabit Ethernet, using Realtek RTL8110SC Controller, RJ45 connector
Protection:	1.5 KV magnetic isolation protection
Serial Communication	
Serial Port:	RS-232/422/485 x 8, software-selectable, DB9 RS-232 signals: TxD, RxD, DTR, DSR, RTS, CTS, DCD, GND RS-422 signals: TxD+, TxD-, RxD+, RxD-, GND

	4-wire RS-485 signals: TxD+, TxD-, RxD+, RxD-, GND
	2-wire RS-485 signals: Data+, Data-, GND
Protection:	15 KV ESD protection for all signals
Data bits:	5, 6, 7, 8
Stop bit(s):	1, 1.5, 2
Environment	
Operating Temperature:	-10 to 60°C (14 to 140°F), 5 to 95% RH (with CF installed)
	0 to 40°C (35 to 104°F), 5 to 95% RH (with HD installed)
	-35 to 75°C (-31 to 167°F), 5 to 95% RH (for -T model)
Anti-Vibration:	5G @ IEC-68-2-6, sine wave, 5-500 Hz, 1 Oct./min, 1hr/axis (with CompactFlash card)
	1G @ IEC-68-2-6, sine wave, 5-500 Hz, 1 Oct./min, 1hr/axis (with hard disk)
Anti-Shock:	50G @ IEC-68-2-27, half sine wave, 30 ms (with CompactFlash card)
	20G @ IEC-68-2-27, half sine wave, 30 ms (with hard disk)
Warranty	5 years

V481-XPE Software Features

The V481-XPE is a ready-to-run Intel x86 embedded box computer with VGA, dual LANs, 8 RS-232/422/485 serial ports, USB, and audio. The software features of the V481-XPE are listed below:

Application Development Environment

The V481-XPE embedded computer is fully compatible with the XP Professional Development Environment.

The V481-XPE provides the following common, popular application development features to make the Windows XP Embedded with SP2 environment into an easy and convenient programming tool.

Applications that run under Windows XP can also run under V481-XPE, meaning that there no additional cost is required to migrate from XP to XPE.

Windows XP Embedded is based on the same binary files as Windows XP Professional; Windows XP Embedded enables you to speed up your development of reliable and full-featured connected devices.

- **Microsoft .Net Framework 2.0 with service pack 2**—This component includes the common language runtime (CLR) and the .NET Framework class library.
- **Active Directory Service Interface (ADSI) Core**—Provides the basic functionality for ADSI. This component routes any requests to the corresponding provider according to the path it is provided.
- **Active Template Library (ATL)**—Supports ATL applications.
- **ASP.NET 2.0**—A unified Web application platform that provides the services necessary to build and deploy enterprise-class Web applications.
- **Certificate Request Client & Certificate Autoenrollment**—This component includes the common language runtime (CLR) and the .NET Framework class library.
- **COM Base**—Component Object Model (COM) includes a programming model and a set of application programming interfaces (APIs), and does not include a dedicated user interface.
- **Common Control Libraries**—(Side by Side) the component provides common user interface

(UI) controls.

- **Common File Dialogs**—Support for common dialog boxes.
- **Direct3D**—Infrastructure for using two-dimensional and three-dimensional graphics.
- **DirectPlay**—Provides a networking API that can enable any application to operate over both a peer-to-peer and client/server topology.
- **DirectShow**—Base filter graph and device enumeration support for all DirectShow applications. This component also provides most DirectShow filters.
- **Distributed Transaction Coordinator (MSDTC)** —A distributed transaction facility for Microsoft Windows systems, which uses transaction-processing technology. MSDTC exploits loosely coupled systems to provide scalable performance.
- **Enhanced Write Filter**—An upper filter in the storage device driver stack that redirects disk write operations to volatile (RAM) or non-volatile (disk) storage.
- **Event Log**—A dynamic-link library (DLL) that runs as part of Services.exe. This component stores and retrieves events that can be viewed in the event viewer.
- **Internet Explorer**—The Internet Explorer Web browser that allows customers to connect to the Internet or to an intranet (see properties via inetcpl.cpl).
- **Mapi32 Libraries**—The infrastructure for e-mail support.
- **Message Queuing (MSMQ) Core**—Message Queuing is a messaging infrastructure and a development tool for creating distributed messaging applications for Microsoft Windows operating systems; it provides guaranteed message delivery, efficient routing, increased security, support for sending messages within transactions, and priority-based messaging.
- **Microsoft Visual C++ Run Time Libraries**—The Microsoft C++ Runtime Library.
- **NTFS**—The NTFS File System driver (NT File System). Use NTFS instead of FAT for optimum file system security.
- **Power Management**—This component includes a dynamic-link library for power management features in the xpepm.dll file, and a command-line tool for using power management on a run-time image in the xpepm.exe file. Note: Instead of using this component, Shutdown.exe is the preferred method to shut down the system..
- **Registry Editor**—The Registry Editor (regedit.exe, regedt32.exe).
- **RPC**—Facilitates local remote procedure calls (RPCs) using the ncalrpc and ncacn_np protocol sequences, and provides support for dynamic endpoint resolution. The RPC name service provides remote procedure call (RPC) named services functionality, such as the RPC Locator. The RPC Named Service component exposes all RpcNs* RPC functions. The RPC server provides a variety of RPC and Component Object Model (COM) services, including RPC Endpoint Mapper, COM Service Control Manager (SCM) and COM Object Resolver.
- **Smart Card Cryptographic Service Providers**—Supports features such as smart card logon and improved e-mail security. Smart cards must be capable of certain RSA public key cryptographic operations. These functions are exposed by using CryptoAPI and, specifically, through a CSP. Typically, each type of smart card requires a CSP, which is provided by the card vendor.
- **USB 2.0**—The core drivers needed to communicate with an Enhanced Host Controller Interface (EHCI) that is compliant with The USB .95 or 1.0.
- **Windows API**—Provides the user-mode component of the Windows operating system API.
- **Windows Media Player 10**—Playback functionality for digital media that includes music, videos, CDs, DVDs, and Internet Radio for end users and developers.
- **Windows Script Engines**—A complete scripting environment for Windows, including command-line scripting, script languages, and the ability to host script engines within your

applications.

- **WMI**—Bundles the features that combine to create the Windows Management Instrumentation (WMI) technologies.

Networking and Communication Capabilities

For network centric embedded application usage, the V481-XPE provides powerful communication hardware interfaces, including four Ethernet and 8 serial ports, and also supports the networking and communications capabilities that are built into Windows® XP Embedded with SP2 OS. The features that are supported are listed as below.

- **DHCP Client Service**—Registers and updates Internet Protocol (IP) addresses and Domain Name System (DNS) records for your target system.
- **IP Security Services**—This component provides IP Security (IPsec) services for all IP traffic.
- **Dial-Up Networking**—Provides the infrastructure necessary to implement a Remote Access Service (RAS) client.
- **Microsoft-Windows-HTTP**—Services that implement the functionality of the HTTP protocol on a server.
- **TCP/IP Networking**—Implements the core TCP/IP protocol stack, which includes the IPv4 version for the following protocols: Transmission Control Protocol (TCP), User Datagram Protocol (UDP), raw, Internet Control Message Protocol (ICMP), Internet Group Membership Protocol (IGMP), and Address Resolution Protocol (ARP). The component also includes Wshtcpip.dll, which is the Winsock provider for TCP/IP to enable socket-level communication over TCP/IP.
- **TAPI**—A Telephony API (TAPI) Telephony Service Provider (TSP).
- **Simple Network Management Protocol (SNMP)**—SNMP is an agent service that provides management systems with information about activities that occur at the Internet Protocol (IP) network layer. The SNMP agent monitors network traffic, and retrieves and updates local management information based on the requests from the SNMP manager. The agent also notifies registered managers with traps when significant events occur.
- **Time Service Core**—Synchronizes a workstation's clock with other computers using the Network Time Protocol (NTP) version 3. For increased accuracy, this component also incorporates algorithmic enhancements from NTP 4.
- **Windows Firewall/Internet Connection Sharing (ICS)**—Windows Firewall provides a barrier between your device and network connections to help reduce attacks by hackers, viruses, and worms across networks. Strongly recommended..
- **Wireless Zero Configuration**—Support for the Windows implementation of the IEEE 802.11 standard. This component performs automatic configuration and authentication for IEEE 802.11 wireless network adaptors.
- **Unimodem**—Provides the infrastructure necessary for applications to communicate with a modem.

Supporting Services and Daemons

In addition to development and communication capability, the V481-XPE embeds the services and daemons shown below. These common and easy-to-use application servers help users migrate industrial communication applications to the V481-XPE embedded computer very easily and conveniently.

- **COM+ Services**—The next evolution of Microsoft Component Object Model (COM) and Microsoft Transaction Server (MTS).
- **Computer Browser Service**—Computer browsing functionality exposed by Windows through Microsoft Networking. It allows a client machine to browse its network neighborhood for available computers, exposing file and print sharing services.
- **Disk Management Services**—Support for disk and volume management operations. The component implements a Component Object Model (COM) interface that can be used to query and configure disks and volumes (both basic and dynamic). The component also monitors disk arrivals and removals and other changes in the storage subsystem.
- **IIS Web Server**—Allows you to create and manage Web sites.
- **Terminal Server**—Microsoft Terminal Server client application (mstsc.exe).
- **Remote Registry Service**—Enables remote users to modify registry settings on this computer.
- **Telnet Server**—Allows users to connect to Telnet servers from remote computers.

How to Determine Firmware Build Versions

Use the mxver command to obtain the firmware version of the V481-XPE embedded computer. This information is particularly important for identifying which features your embedded computer supports.

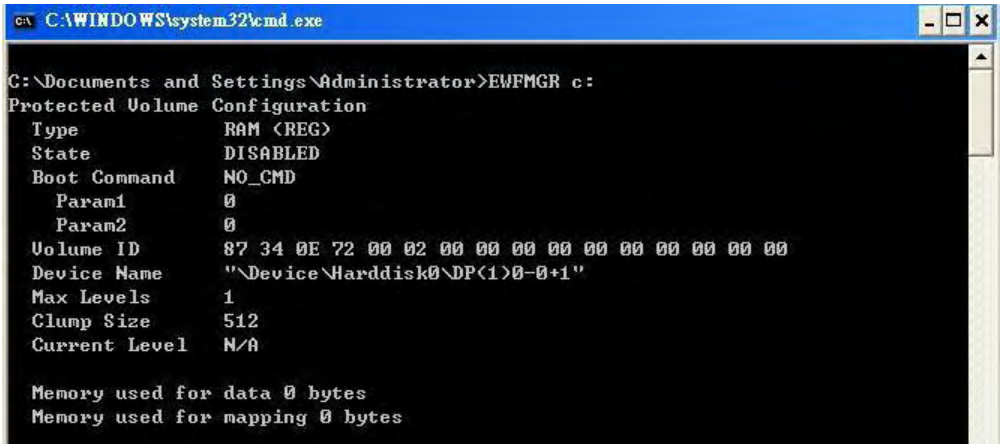
- Execute the **mxver.exe** command line utility.

C:\> mxver
Model Name: V481-XPE
Version: 1.0
Build Date: 07100218

Enhanced Write Filter

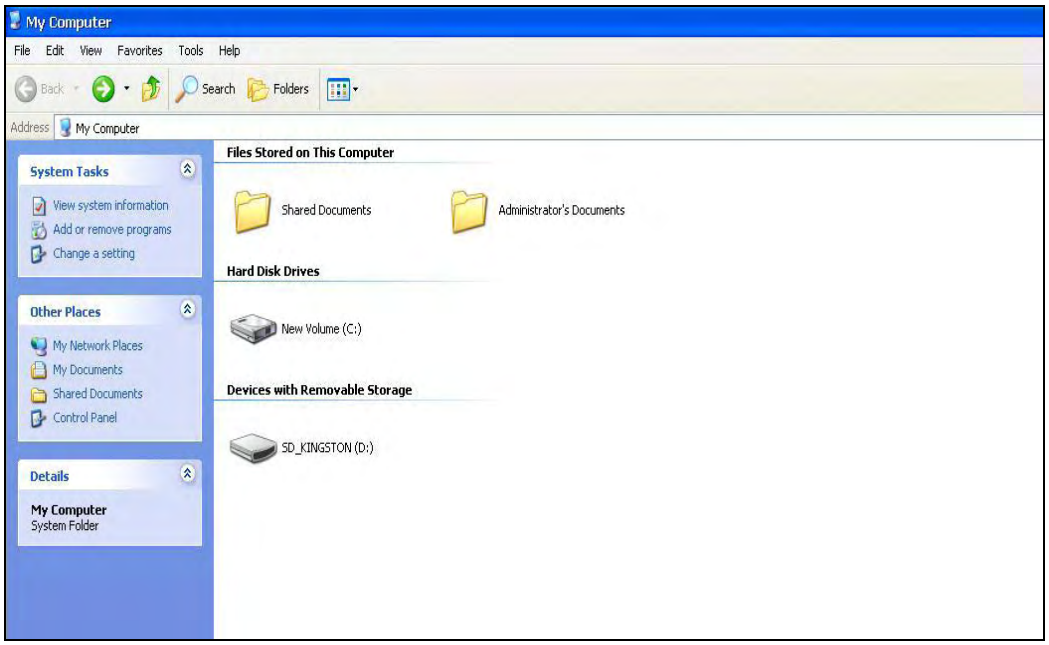
Protects the contents of a volume on the target media volume by redirecting all writes to another storage location called on overlay. Use the following steps to enable Enhanced Write Filter.

1. Type **EWFMGR C:** to check the state of Enhanced Write Filter was disable
2. Type **EWFMGR C:** to enable Enhanced Write Filter.
3. Reboot the system to take effect.
4. Delete a file on your protected volume and reboot the system; the file you just deleted will appear.


C:\WINDOWS\system32\cmd.exe
C:\Documents and Settings\Administrator>EWFMGR c:
Protected Volume Configuration
Type RAM (REG)
State DISABLED
Boot Command NO_CMD
Param1 0
Param2 0
Volume ID 87 34 0E 72 00 02 00 00 00 00 00 00 00 00 00 00
Device Name "\Device\Harddisk0\DP(1)0-0+1"
Max Levels 1
Clump Size 512
Current Level N/A
Memory used for data 0 bytes
Memory used for mapping 0 bytes

Inserting a USB Mass Storage Device into a V481 Computer

Inserting a USB mass storage device will generate a new drive on the V481-XPE. The new drive should be visible in the File Explorer.



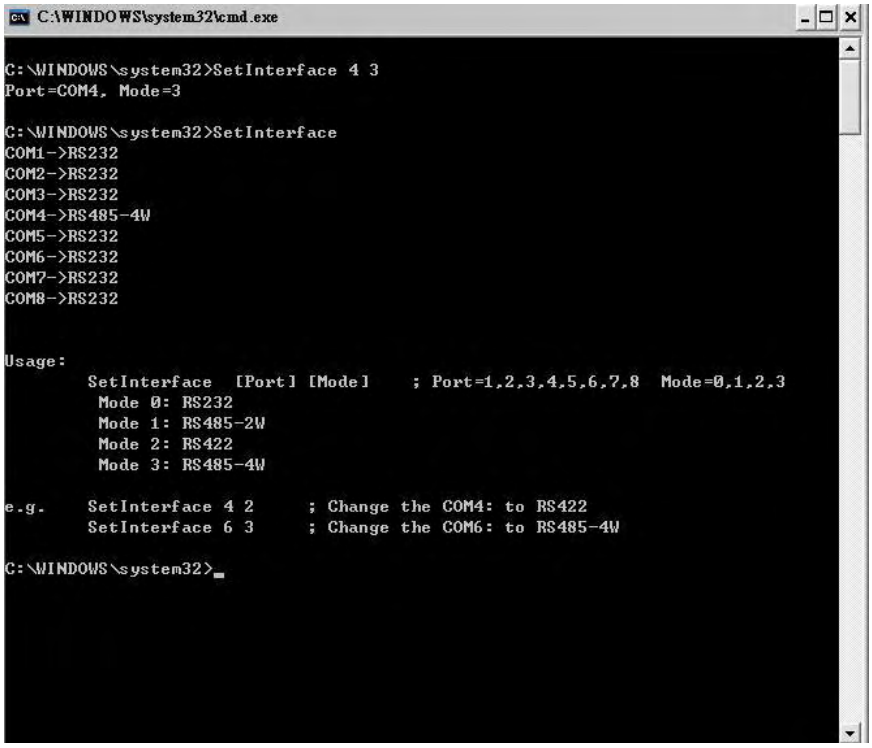
Inserting a CompactFlash into the Computer

The V481 has a type II CompactFlash slot that supports cards of both types I and II. A mass storage card is considered to be secondary storage for the computer. When a mass storage card is inserted, the V481 creates a directory named "a new removable disk" under the root directory, and the newly created directory serves a link to the storage space.

Eight RS-232/422/485 Serial Ports

The serial ports of the V481-XPE computer, from left to right and bottom to top, have the most common names, starting with "COM1:" and ending at "COM8:" and they are designed to provide reliability, high-speed, and 3-in-1 (i.e., RS-232, RS-422, and RS-485) operation for your applications. Each of these ports supports Baud Rate settings up to 921600 bps.

There is a command line utility "SetInterFace" for users to view and set the current operation mode.



2

Getting Started

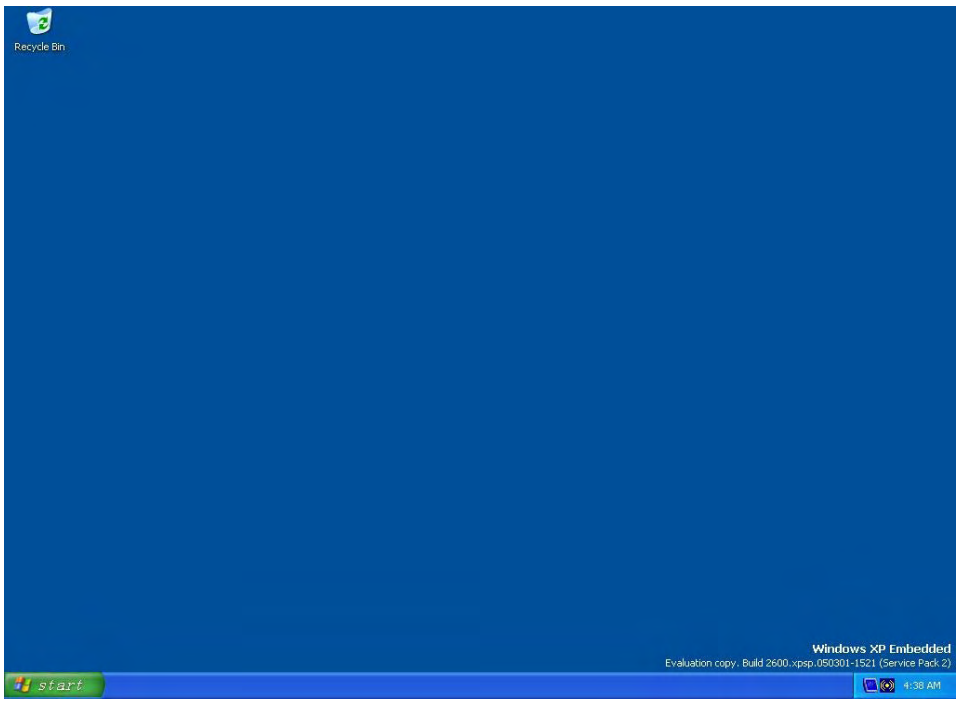
In this chapter, we explain how to operate a V481-XPE computer directly or to do it from a PC near you. In addition, steps are described to facilitate operations, such as system time adjustment, troubleshooting network connectivity, etc. Some of these operations can be done with system commands after gaining access to the computer, and others can be done by a "System Manager" application, which is described in a later chapter.

In this chapter, we cover the following topics:

- **Starting Your V481-XPE Computer**
- **Resetting Your V481-XPE Computer**
- **Changing the Network Settings**
- **Operating Your V481-XPE Computer with a Telnet Client**
- **Adjusting the System** Time
- **Starting and Stopping Services**
- **Simple Network Management Protocol (SNMP)**
- **Inserting a USB Mass Storage Device into the Computer**
- **Inserting a Compact Flash Card Storage into a V481 Computer**
- **Inserting a Hard Disk Drive into a V481 Computer**

Starting Your V481-XPE Computer

Connect the CRT monitor or LCD monitor to the target computer, and then power it up by connecting it to the power adaptor. It takes about 30 to 40 seconds for the system to boot up. Once the system is ready, the Desktop will appear on your monitor.



Resetting Your V481-XPE Computer

- Reset Button

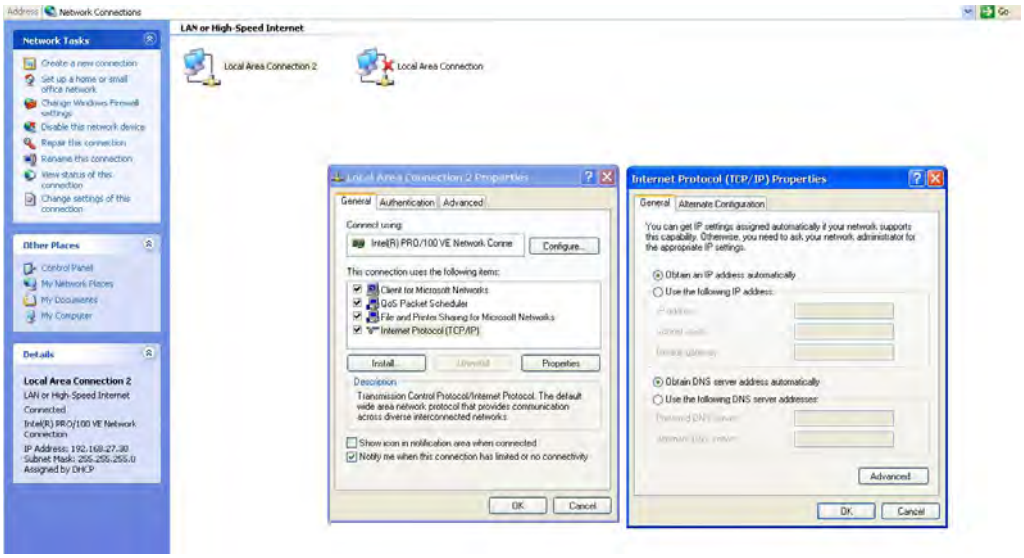
A **Reset** button is located on the V481-XPE case. You can shutdown your V481 by pressing this button (just as you do with a standard PC).

- Software Shutdown / Reboot

Click **Start → Shutdown** to reboot or shutdown the V481-XPE computer.

Changing the Network Settings

The V481-XPE computer comes with two network interfaces. Both of the default IP addresses are DHCP. Choose **My Device → Control panel → Network Connections** to enter the network settings page. Select the connection and choose an option on the pop-up menu by right-clicking. You can specify the IP address manually or by DHCP. In addition, you can disable or enable either one or both connections with the pop-up menu.

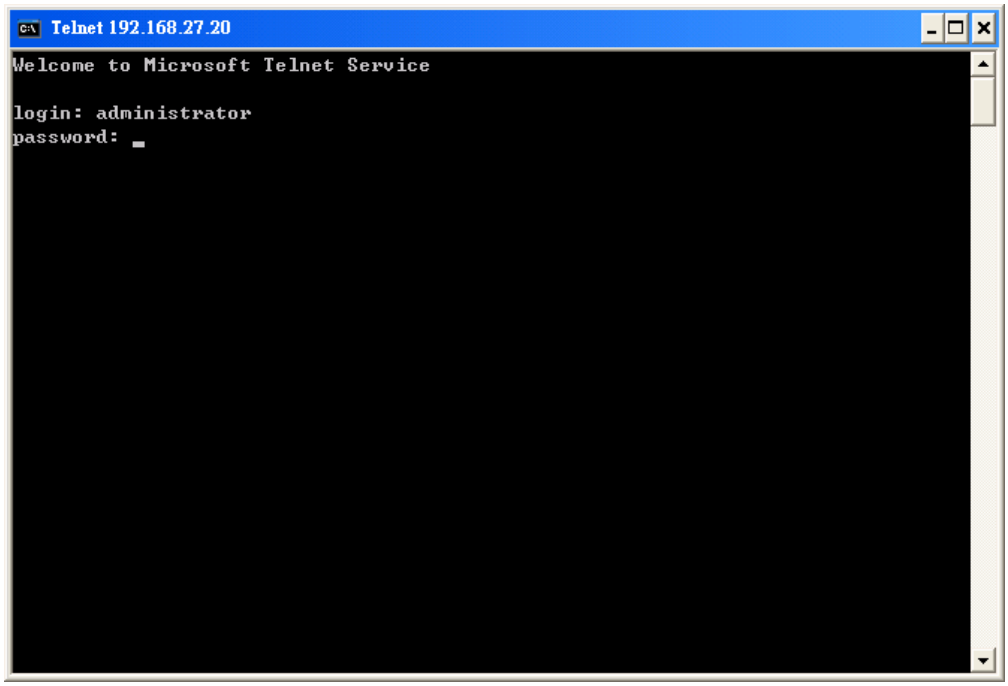


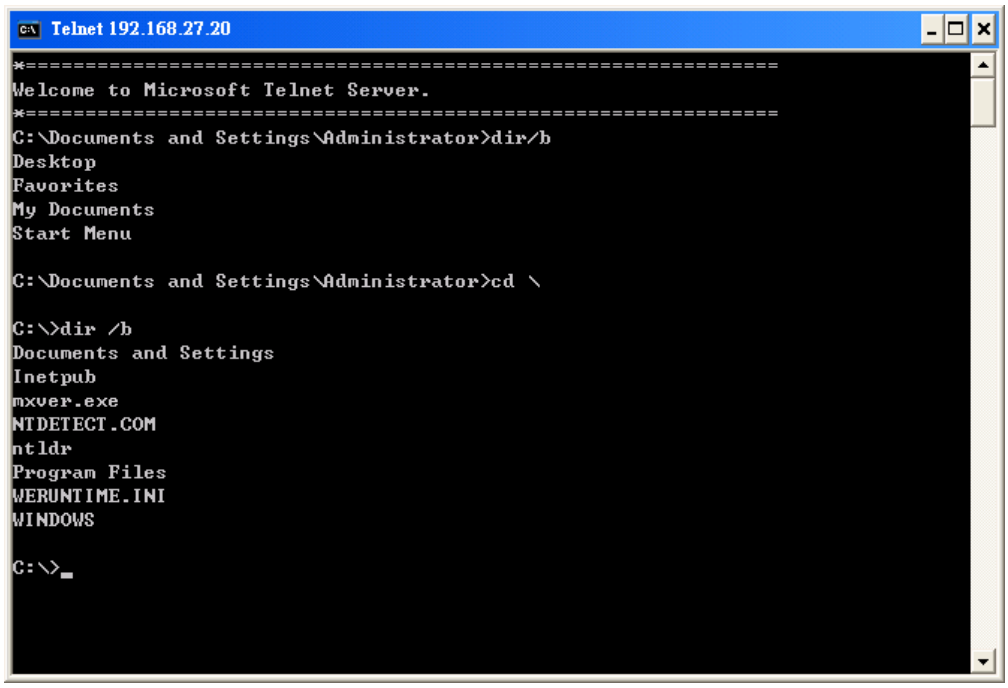
Operating Your V481-XPE Computer with a Telnet Client

Use a crossover Ethernet cable to connect your development workstation directly to the target computer, or use a straight-through Ethernet cable to connect the computer to a LAN hub or switch. Next, use a telnet client on your development workstation to connect to the Telnet console utility of the target computer. After a connection has been established, type the login name and password as requested to log on to the computer.

After logging in through the console port or a Telnet client, a list of commands will be available for operating the computer. Use ***HELP*** to display all of the commands, or type ***HELP [command name]*** to display extended help for the selected command. Some of these commands, such as ***DATE*** and ***TIME***, are very useful for managing the computer's system time. Other commands, such as ***DIR*** and ***MKDIR***, are good utilities for file management. For example, to inspect the file structure of the root directory, type ***DIR.***

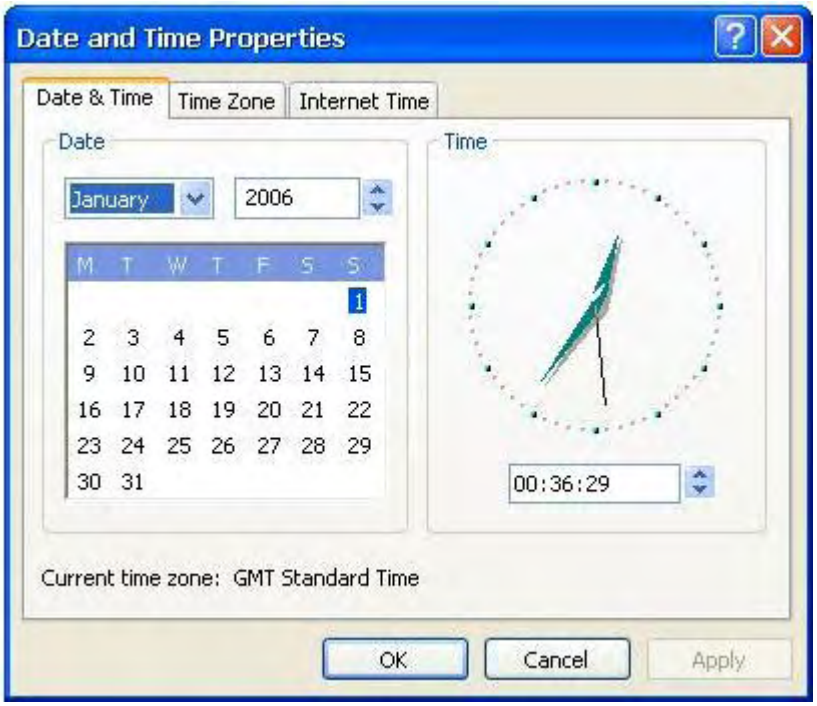
NOTE: The default user id is "administrator" and the default password is not set; you need to create a new password for this account to use this telnet client.


Telnet 192.168.27.20
Welcome to Microsoft Telnet Service
login: administrator
password:


Telnet 192.168.27.20
*===
Welcome to Microsoft Telnet Server.
*===
C:\Documents and Settings\Administrator>dir/b
Desktop
Favorites
My Documents
Start Menu
C:\Documents and Settings\Administrator>cd \
C:\>dir /b
Documents and Settings
Inetpub
mxver.exe
NTDETECT.COM
ntldr
Program Files
WERUNTIME.INI
WINDOWS
C:\>

Adjusting the System Time

- **Setting the System Time Manually:** Use the **date/time** command line utility to query the current system date/time or set a new system date/time.
- **Date/Time Control panel:** Go to the Control Panel and double click the **Date/Time** icon.

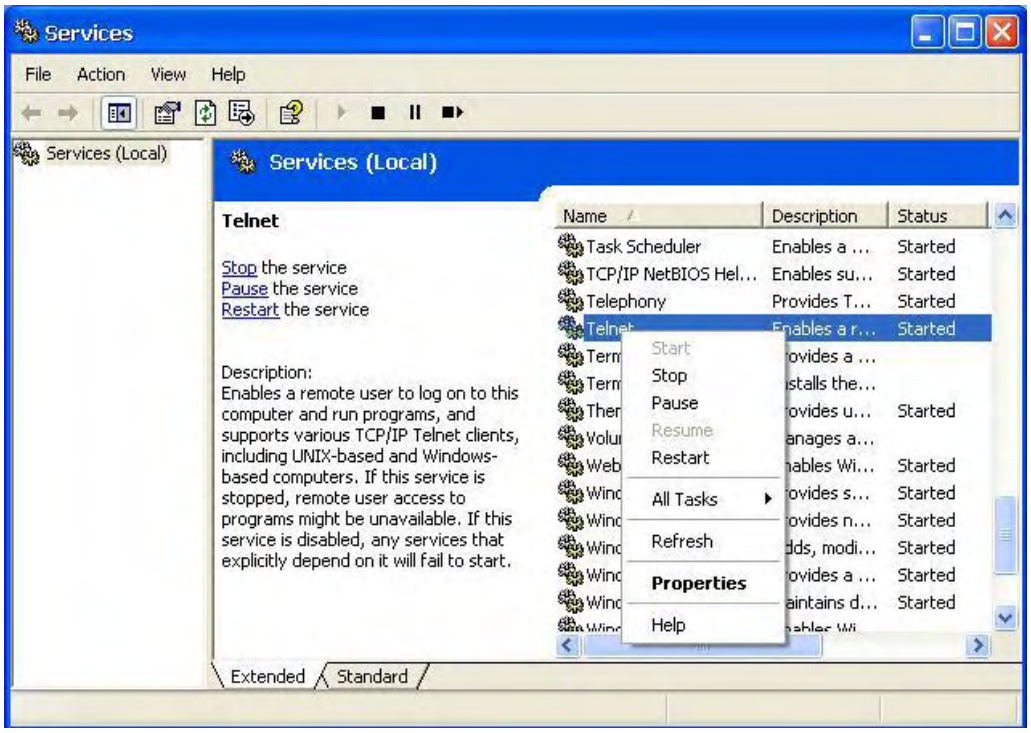


- **SNTP:** In the Date/Time properties window, you can see the NTP server setting.

Date and Time Properties
Date & Time
Time Zone
Internet Time
Automatically synchronize with an Internet time server
Server:
time.windows.com
Update Now
An error occurred while Windows was synchronizing with time.windows.com.
Next synchronization: 08/01/2006 at 00:19
Synchronization can occur only when your computer is connected to the Internet. Learn more about time synchronization in Help and Support Center.
OK
Cancel
Apply

Starting and Stopping Services

Select **Start → Control Panel → Administrative Tools** and double click **Services**.



Simple Network Management Protocol (SNMP)

To check SNMP agent capabilities on a target V481-XPE (e.g., suppose the network IP is 192.168.3.127) computer, log on to the workstation computer on which the SNMP manager resides and then type:

\> snmpwalk -v 2c -c public 192.168.3.127 system

You will see a series of messages from the SNMP agent on the V481-XPE computer that allow you to monitor and manage the computer.

Inserting a USB Mass Storage Device into the Computer

Inserting a USB mass storage device will generate a new drive on the V481. The new drive should be visible in the File Explorer.

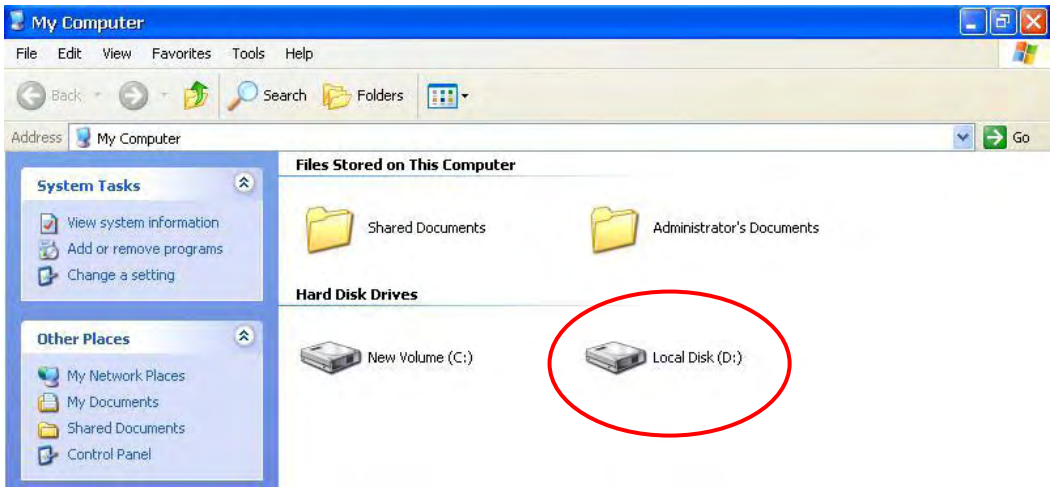
Inserting a Compact Flash Card Storage into a V481 Computer

There is a second CompactFlash slot inside the V481 computer. The Compact Flash slot is designed as a secondary IDE device and it does not support Plug and Play or hot swapping. If you plug a CF card into the slot when entering the operating system, it will make the system hang.

As a result, you must turn off the power before inserting a Compact Flash card. After the CF card is inserted, you can power on the V481. The new folder should be visible in the File Explorer.

Inserting a Hard Disk Drive into a V481 Computer

There is an IDE-based connector in the V481 computer, allowing users to connect a 2.5-inch hard disk drive for additional storage expansion. It does not support Plug and Play. You must turn off the power before installing a hard disk drive to your computer. After you install the hard disk drive, you can power on the V481.The new drive should be visible in the File Explorer.



3

Management Tools

The V481 series of ready-to-run embedded computers are network-centric platforms designed to serve as front-ends for data acquisition and industrial control applications. Due to the distributed characteristics of the devices that these computers control, they often reside in harsh environments at remote locations. To manage these computers, it is necessary to have access to operations such as networking/server configuration, file management, and process (thread) monitoring/control.

A management system is installed on the V481 computer to resolve these management issues.

Before operating the system, please make sure that you have a CRT or panel monitor connection to your V400 box computer.

In this chapter, we cover the following topics:

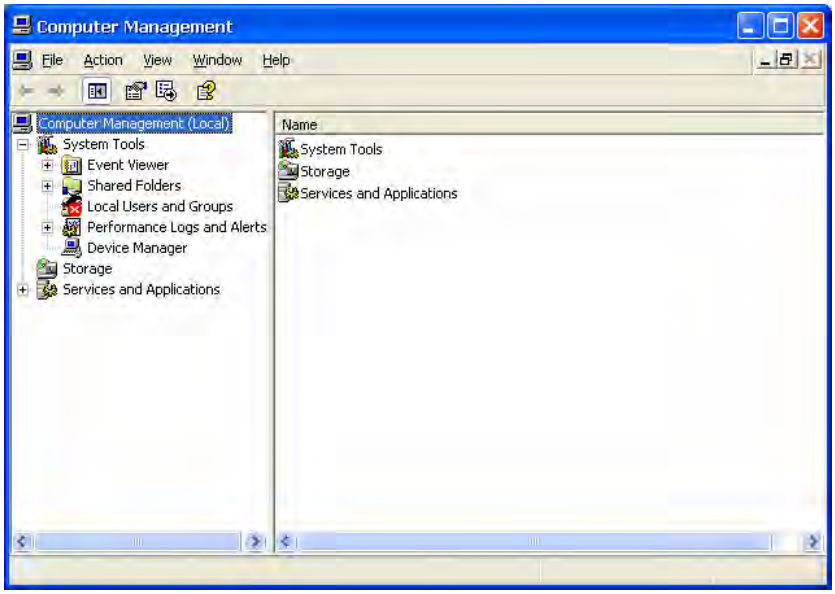
- **Computer Management**
- **Component Services**
- **Event Viewer**
- **Internet Information Services (Web/FTP)**
- **ODBC**
- **Performance Monitor**
- **Services**

Computer Management

[Control Panel] → [Administrative tools] → Computer Management.

You can use the tools for a variety of tasks, such as disk partition, disk mount/dismount, and create/remove users.

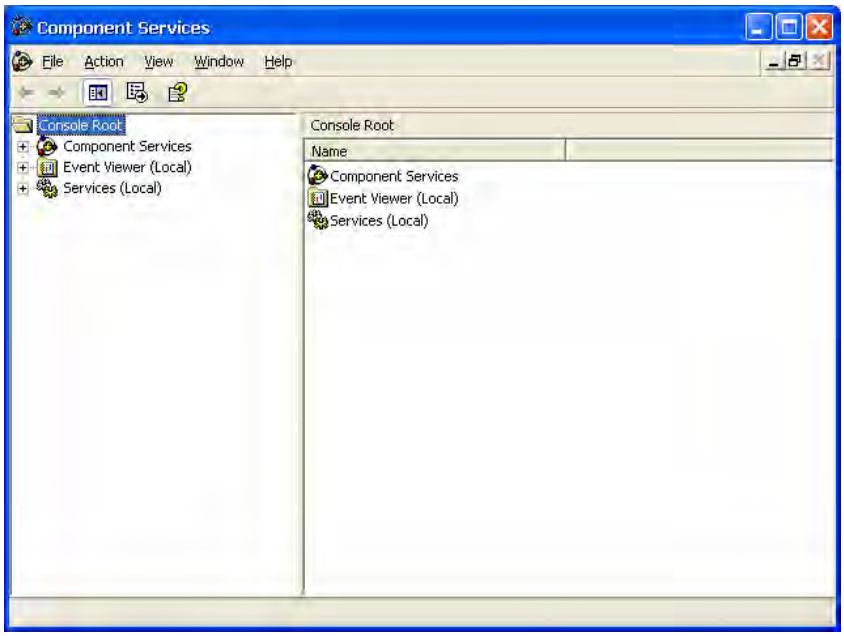
You can also check services in the Computer Management window.



Component Services

[Control Panel] → [Administrative tools] → Component Services.

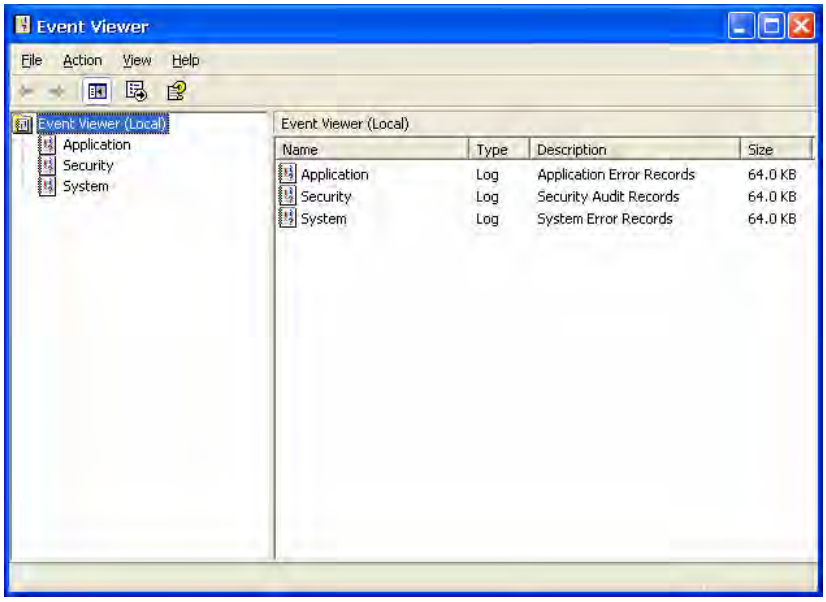
You can install/view/remove COM components with this tool.



Event Viewer

[Control Panel] → [Administrative tools] → Event Viewer.

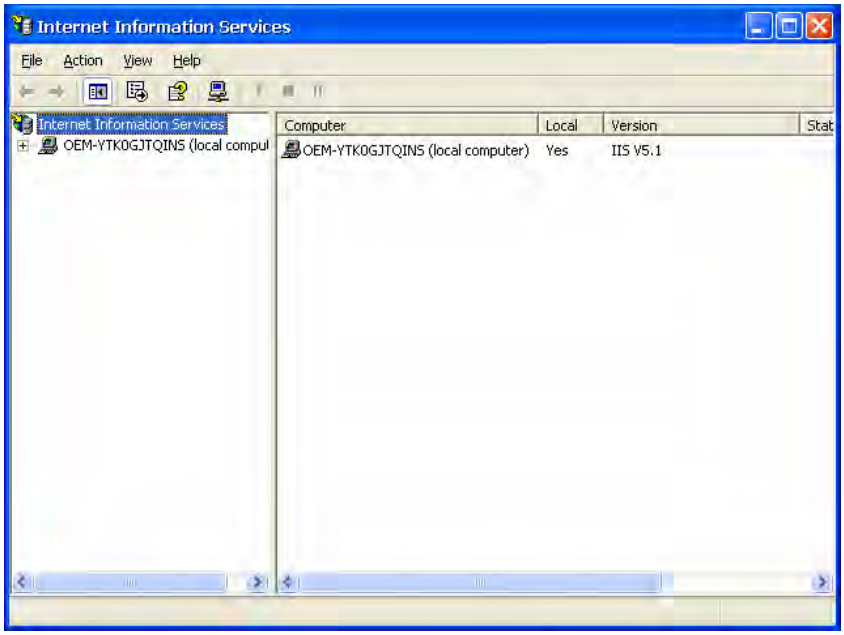
Every V481-XPE event, including system, applications, and security events are logged in this event database.



Internet Information Services (Web/FTP)

[Control Panel] → [Administrative tools] → Internet Information Services.

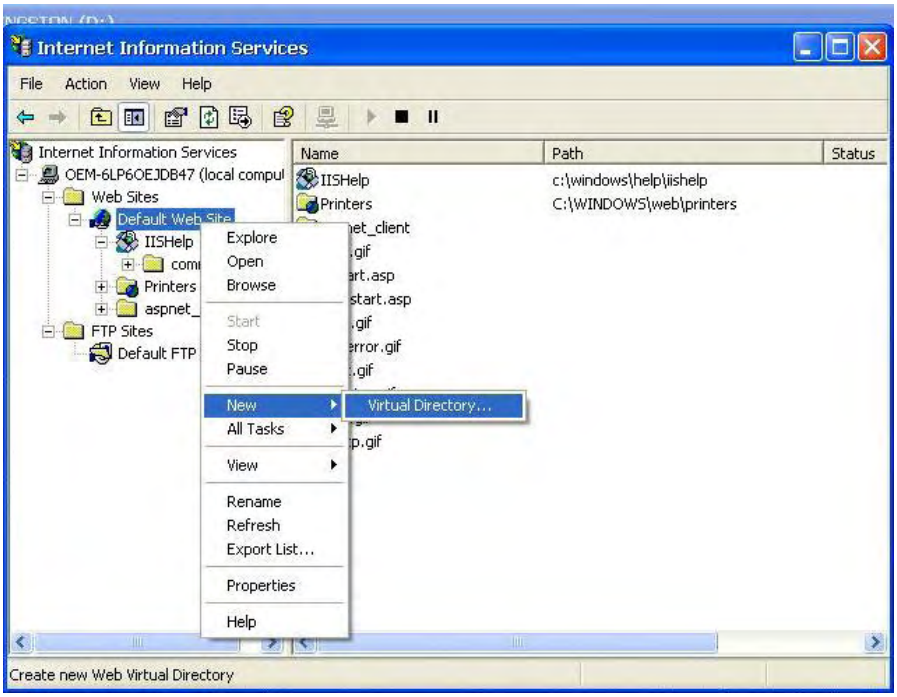
If you need to set up Web or FTP, you must use this tool for configuration purposes, and you can also start/stop HTTP/FTP services.



A default web page is located in the directory **c:\Inetpub**. Use this default page to test your web server.

Follow the steps shown below to create the virtual directory.

1. Create a virtual directory by selecting **Default Web Site → New → Virtual Directory.**

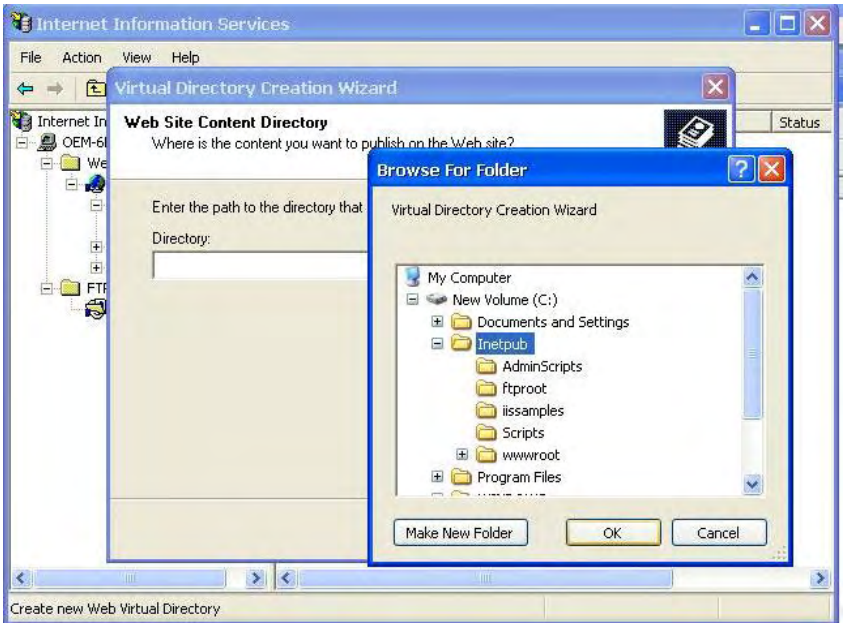


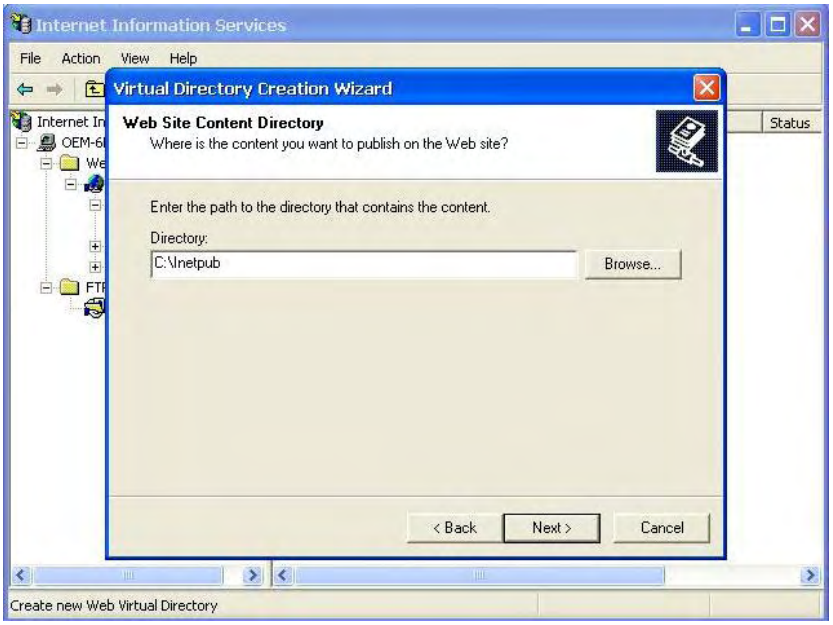
2. Follow the virtual directory creation wizard and complete the steps to create the virtual directory **c:\Inetpub**.

3. When you complete the steps, the virtual directory **WEB** will appear under **Default WEB Site**.

4. On your desktop, type **[IP Address]/WEB/Default.htm** (e.g., 192.168.3.127/WEB/Default.htm). The following message will appear. The steps are indicated in the following sequence of diagrams.

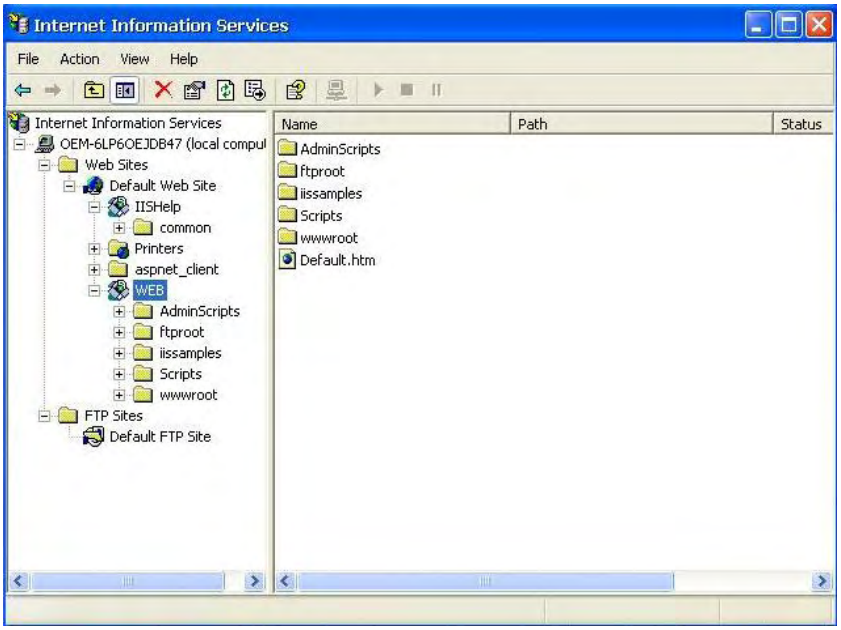
Virtual Directory Creation Wizard
Welcome to the Virtual Directory Creation Wizard
This wizard will help you create a new Virtual Directory on this Web site.
Click Next to continue.
< Back
Next >
Cancel


Internet Information Services
File Action View Help
Virtual Directory Creation Wizard
Web Site Content Directory
Where is the content you want to publish on the Web site?
Enter the path to the directory that
Directory:
Browse For Folder
Virtual Directory Creation Wizard
My Computer
New Volume (C:)
Documents and Settings
Inetpub
AdminScripts
ftproot
iissamples
Scripts
wwwroot
Program Files
Make New Folder
OK
Cancel
Status
Create new Web Virtual Directory


Internet Information Services
File Action View Help
Virtual Directory Creation Wizard
Web Site Content Directory
Where is the content you want to publish on the Web site?
Enter the path to the directory that contains the content.
Directory:
C:\Inetpub
Browse...
< Back
Next >
Cancel
Status
Create new Web Virtual Directory

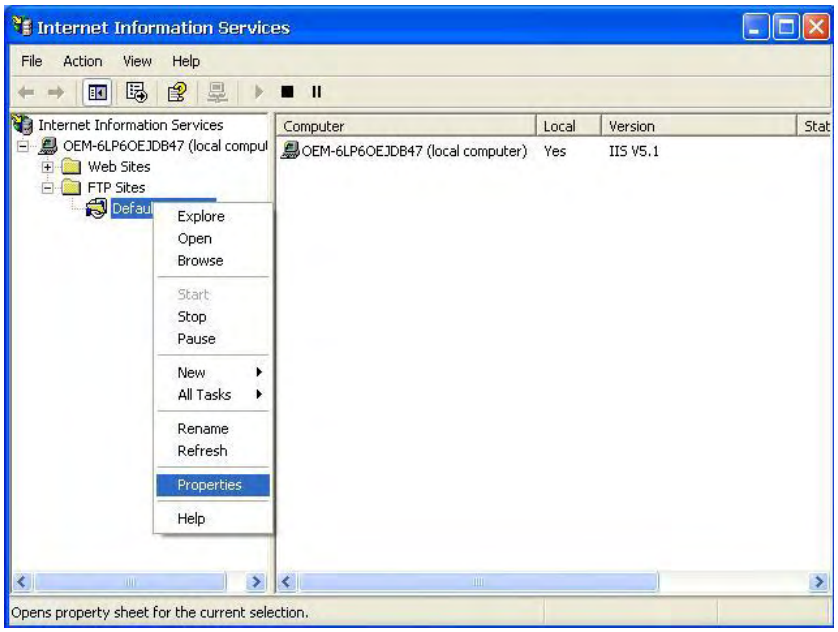
Internet Information Services
File Action View Help
Virtual Directory Creation Wizard
Access Permissions
What access permissions do you want to set for this virtual directory?
Allow the following:
Read
Run scripts (such as ASP)
Execute (such as ISAPI applications or CGI)
Write
Browse
Click Next to complete the wizard.
< Back
Next >
Cancel
Status
Create new Web Virtual Directory

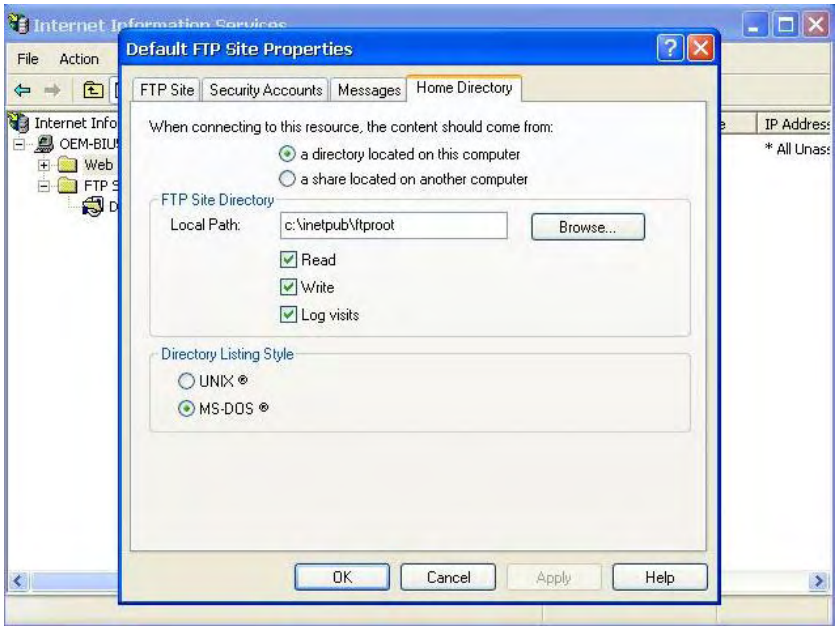
Internet Information Services
File Action View Help
Virtual Directory Creation Wizard
You have successfully completed the Virtual Directory Creation Wizard.
Click Finish to continue.
< Back
Finish
Cancel
Status
Create new Web Virtual Directory



IIS server is started!

If you need to use the FTP server, you must create the default password for your account and turn on the write permission on your home directory located in **c:\intepub\ftproot**. Select **FTP Sites → Properties → Home Directory**, and checkmark the **Write** checkbox. You should now be able to transmit files through the ftp server.

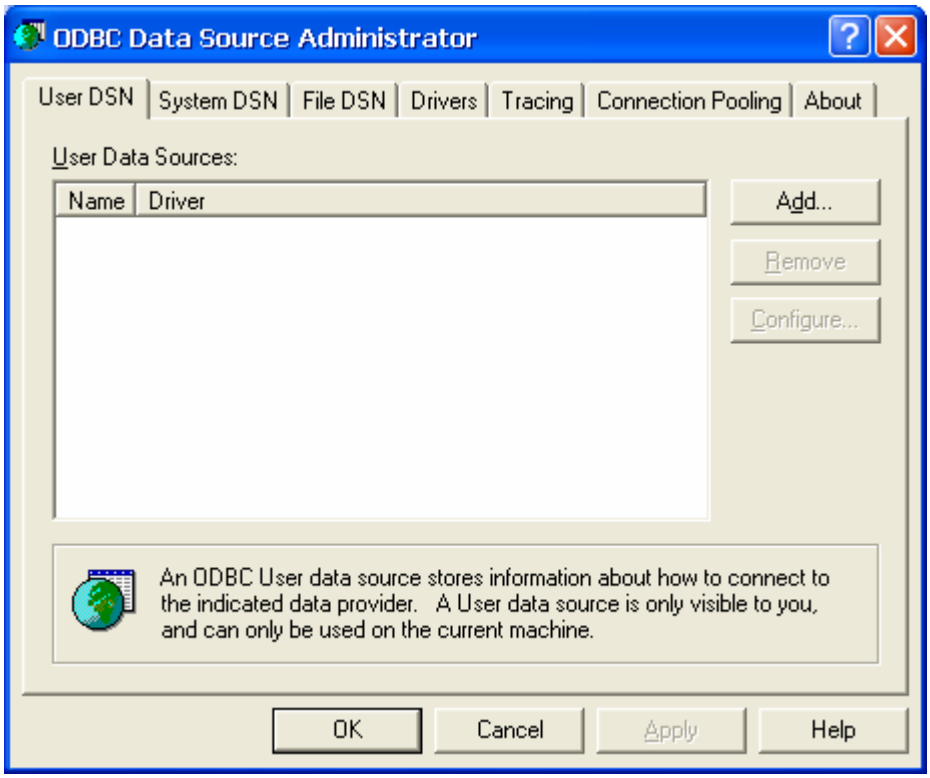




ODBC

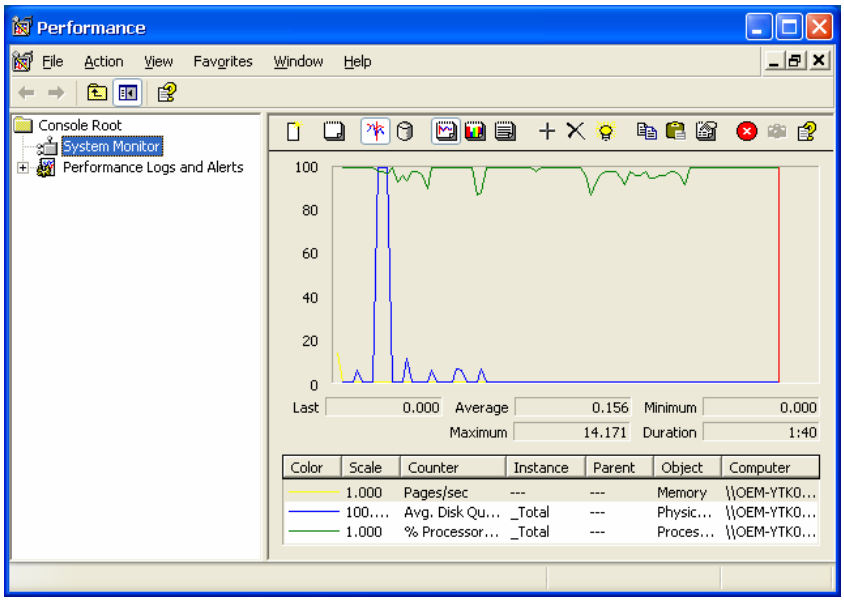
[Control Panel] → [Administrative tools] → ODBC.

This is a database source configuration tool.



Performance Monitor

[Control Panel] → [Administrative tools] → Performance

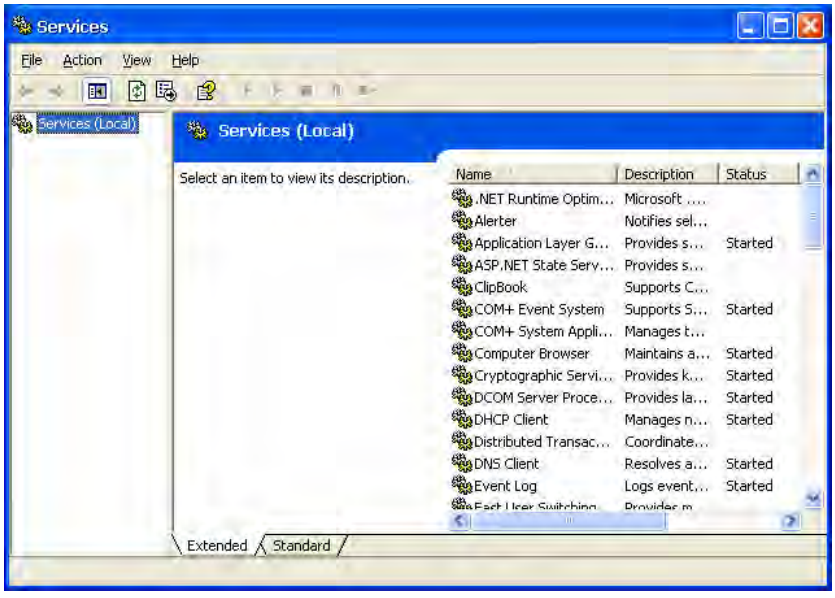


Services

[Control Panel] → [Administrative tools] → Services

You can use this utility to start/stop/restart services.

(e.g. If you do not need telnet service you can stop it and set the "startup option" to "manual".)


Services
File Action View Help
Services (Local)
Services (Local)
Select an item to view its description.
Name Description Status
.NET Runtime Optim... Microsoft ....
Alerter Notifies sel...
Application Layer G... Provides s... Started
ASP.NET State Serv... Provides s...
ClipBook Supports C...
COM+ Event System Supports S... Started
COM+ System Appli... Manages t...
Computer Browser Maintains a... Started
Cryptographic Servi... Provides k... Started
DCOM Server Proce... Provides la... Started
DHCP Client Manages n... Started
Distributed Transac... Coordinate...
DNS Client Resolves a... Started
Event Log Logs event... Started
Extended Standard

4

System Recovery

The V481-XPE ready-to-run embedded computers are Windows XP Embedded platforms. This chapter describes how to recover your V481-XPE to a normal status if the Windows.XP Embedded operating system crashes.

Windows XP Embedded Recovery Tools

Anyone who has used computers for a long time knows that storage media can be damaged or can wear out, and consequently user's files and/or operating system files could be damaged. Moxa has developed a set of OS recovery tools that can be used to recover your Windows XP Embedded OS if it crashes unexpectedly.

Recovery Environment

The environment includes the hardware, tools, programs, and scripts used to conduct pre-planned tests.

Hardware

The hardware used includes a V481-XPE computer, and a bootable USB disk that contains the recovery programs.

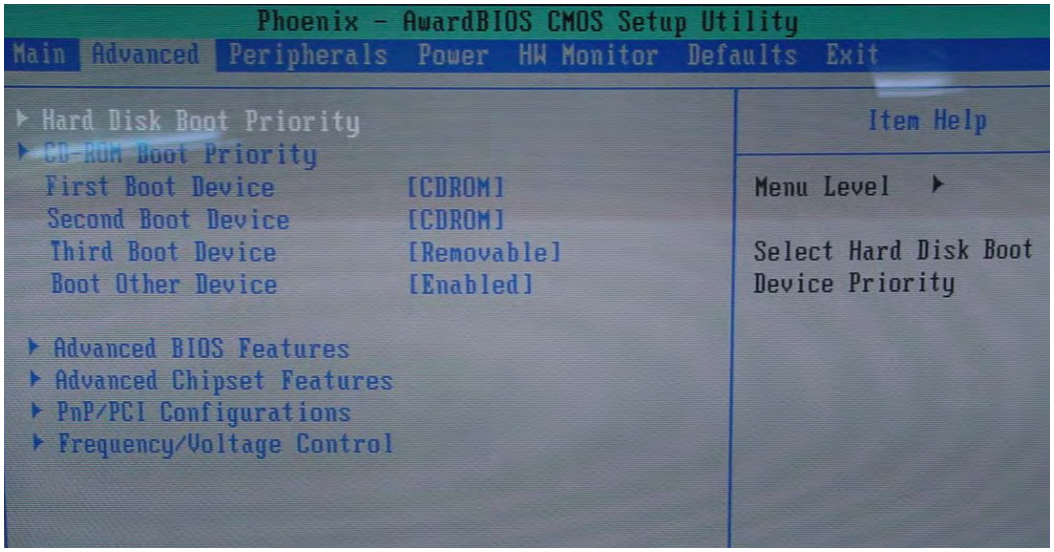
Recovery Programs

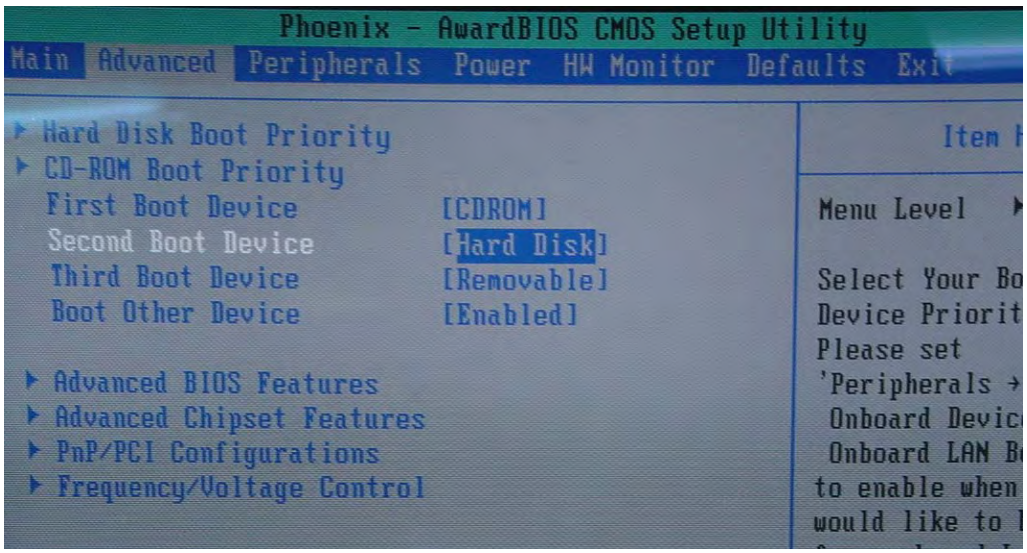
The system recovery programs include programs that create system image files, and programs that recover execution files.

Recovery Procedures

Setting Up the BIOS on the V481-XPE

1. Connect the USB DVD-ROM to the V481.
2. Power on and press **DEL** to enter the bios setup menu.
3. Make sure the **CD-ROM Boot Priority** item is visible.





4. Make sure the first boot device is **CDROM**; if not press **Enter** to change it.
5. Select **[Exit]** → **[Save & Exit Setup]** and then press **Enter**.
6. Choose **Y** to save the changes to the CMOS and exit.

System Recovery

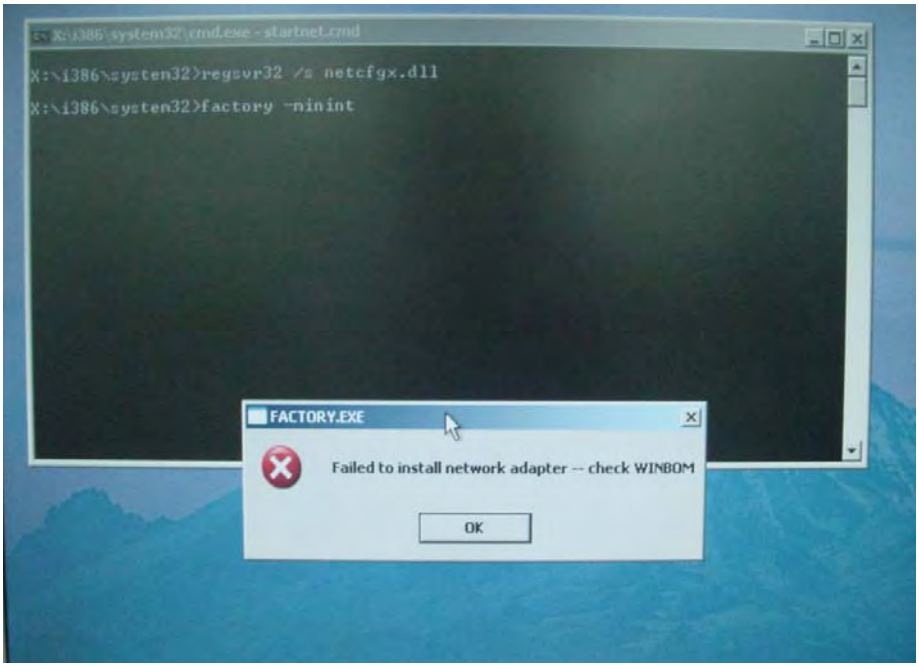
1. If the bios setup is correct, the computer will restart and boot up from the USB DVD-ROM. It will boot into the windows pre-installation environment and set the environment.

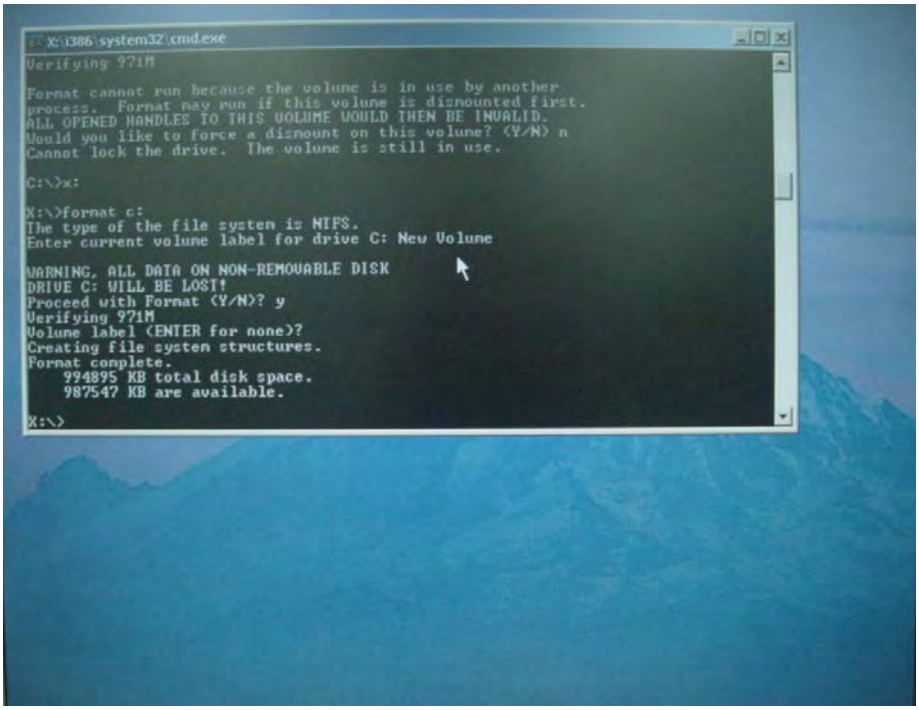
   NOTE: If the blue screen appears and shows an error message, please check your DVD-ROM and try again. If the computer is old or subject to excessive vibrations, you may experience errors when reading data from the DVD-ROM!

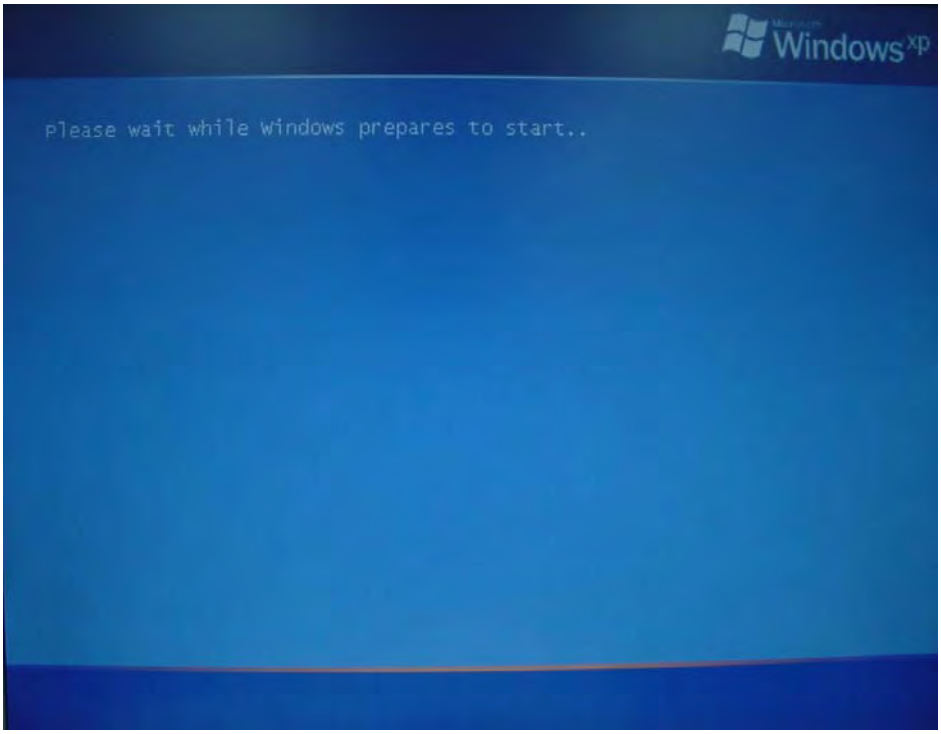
2. During the boot process, you may see an error message related to the network adaptor. Click **OK** to ignore the error.
3. The pre-installation environment provides command-line utilities (e.g., format, xcopy) for copying system file to the compact flash card.
4. Under the command line, type "format /FS:ntfs c:" and then type the Volume Label (e.g., New Volume).
5. Change to the root directory of the DVD-ROM to x:\> and then type "xcopy \RECOVERY*.* c:\ /E /H" to copy the system files to your compact flash card.
6. When execution finishes, click the close button on the command line window to reboot the system.

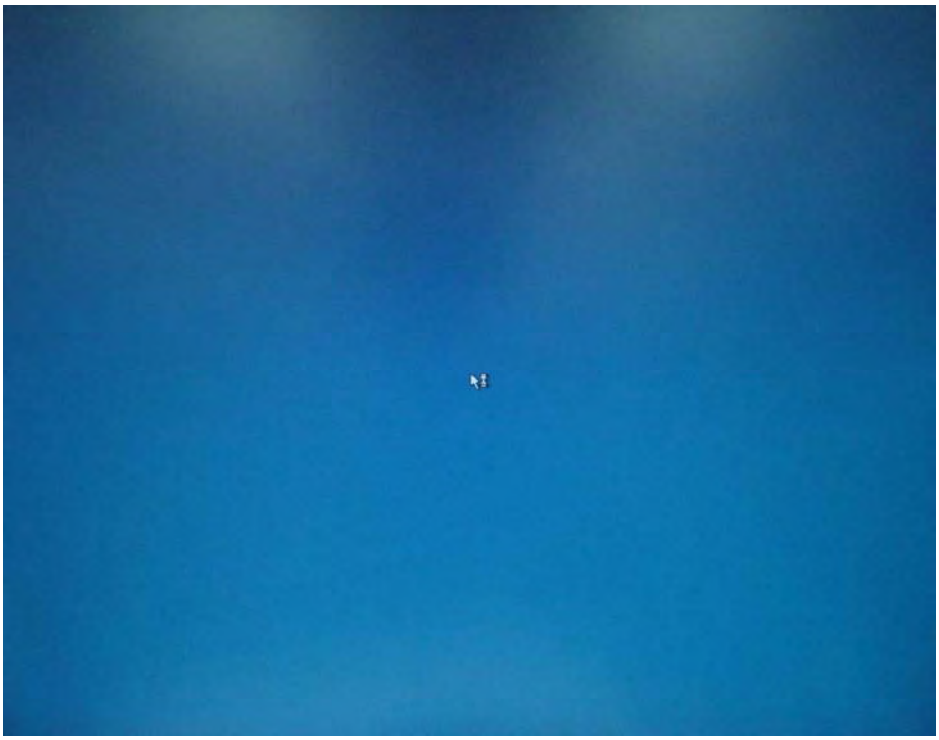
   Note: Do not remove the USB DVD-ROM or an error will occur!

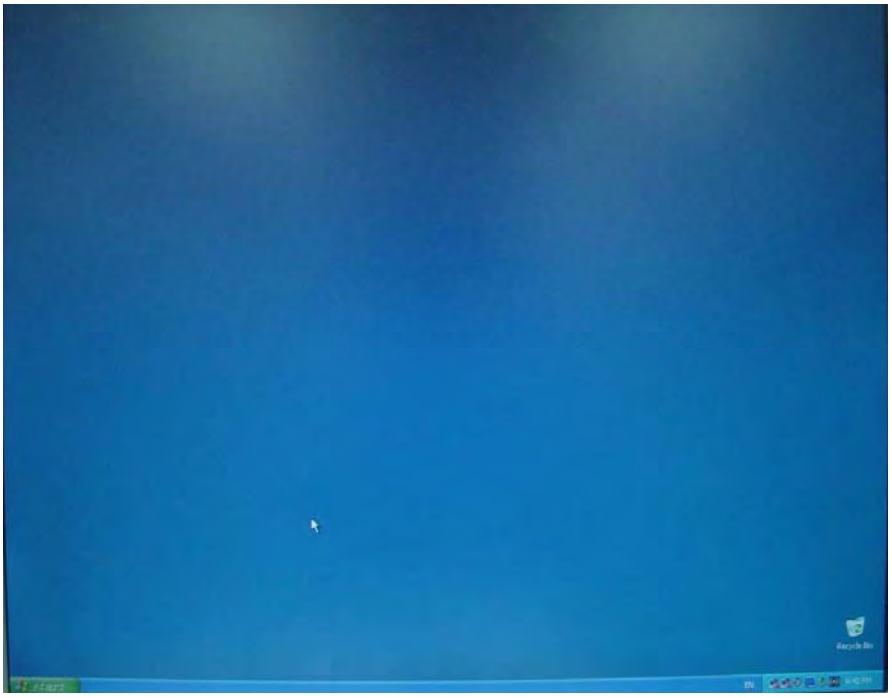
7. The operating system will start, and you should see the "prepares to restart" message.
8. When you see the blue screen, do not turn off the computer. You will need to wait for about 15 minutes.
9. When the recovery process is finished, the desktop should appear.
10. If a message appears asking you to reboot, do so at this time.
11. Disconnect the USB DVD-ROM from the computer.




X:\i386\system32\cmd.exe
Verifying 971M
Format cannot run because the volume is in use by another
process. Format may run if this volume is dismounted first.
ALL OPENED HANDLES TO THIS VOLUME WOULD THEN BE INVALID.
Would you like to force a dismount on this volume? (Y/N) n
Cannot lock the drive. The volume is still in use.
C:\>x:
X:\>format c:
The type of the file system is NTFS.
Enter current volume label for drive C: New Volume
WARNING, ALL DATA ON NON-REMOVABLE DISK
DRIVE C: WILL BE LOST!
Proceed with Format (Y/N)? y
Verifying 971M
Volume label (ENTER for none)?
Creating file system structures.
Format complete.
994895 KB total disk space.
987547 KB are available.
X:\>


Windows xp
Please wait while Windows prepares to start..





Downloading the HP USB Disk Storage Format Tool

The HP USB Disk Storage Format Tool can be downloaded from the HP website. Use any search engine with search term "HP USB Disk Storage Format Tool" to locate the download page.